

What is claimed is:

Sub  
all  
1. In a region dominant color based on various region dominant color extraction methods, a video region dominant color setting method which is characterized in that a region dominant color descriptor is expressed by a number of dominant colors with respect to a certain region, an expressed dominant color, a frequency that the dominant color appears, and an accuracy of a color value representing the region.

2. The method of claim 1, wherein a two region dominant color descriptors are compared and searched by transforming data formed by another dominant color descriptor extraction method into a certain inherent data format in a different system based on the formalized description with respect to an extraction method of the region dominant color descriptor.

3. The method of claim 1, wherein an expression accuracy of the dominant colors extracted by a certain method is obtained in accordance with a degree of confidence of the region dominant color descriptor.

4. The method of claim 1, wherein the confidence is determined based on a maximum color variation value in which the color which is recognized in accordance with an increase/decrease of the color expressed by a certain value is the same color.

5. The method of claim 1, wherein when a certain color is mapped as a dominant color in an image region, color variance which is a difference between an

accurate value of the color and the dominant color value is adapted to the confidence.

6. The method of claim 1, wherein a coherency value which represents a concentration degree of the pixels of a color with respect to the dominant color is adapted to the confidence.

7. The method of claim 1, wherein a size of the region that a dominant color covers in the image region is adapted to the confidence.

8. The method of claim 1, wherein a position of each color pixel in the image region is adapted to the confidence.

9. The method of claim 1, wherein the confidence measure is expressed by a vector value based on a normalized coherence average value, an average value with respect to a difference when a certain color is recognized as a dominant color, a value obtained by summing the size that the dominant color covers in all image regions, and an average value in a region of each color pixel.

10. The method of claim 1, wherein an interoperability between different feature extraction methods is implemented by comparing each confidence value expressed based on the region dominant color descriptor obtained by different region dominant color feature extraction methods with a region dominant color value.

11. The method of claim 1, wherein as an accuracy of color value, confidence measure is expressed with respect to each dominant color of the region

dominant color descriptors.

12. The method of claim 1, the confidence measure per each dominant color is expressed by a vector that consists of the elements or subset of the elements of spatial variance, color variance, the size of region that the dominant color covers and the position of each dominant color pixels in the region.

13. A data structure for describing a extraction method for region dominant color description, comprising:

- an extraction method for extracting a region dominant color;
- a pre-processing description for describing a filtering of a corresponding region when obtaining the region dominant color value;
- a frequency condition description for describing a condition of the frequency of a dominant color obtained by forming a histogram;
- a color space description for describing a descriptor with respect to a color space used for indicating the region dominant color;
- a color sub-space descriptor for defining that the region dominant color is expressed in the sub-space of the thusly defined color space;
- a quantization description for describing a quantization method of the color space; and
- a shaping operation by defining a color cluster description which describes whether the region color is clustered again.

14. The data structure of claim 13, wherein said formalized data structure is described in a header of a memory and is re-defined whenever a corresponding item

is changed.

15. The data structure of claim 13, wherein a data which is obtained by a different dominant color descriptor extraction method in a different system based on the formalized data with respect to an extraction method of the region dominant color descriptor is transformed into an inherent data format for thereby comparing and searching two region dominant color descriptors.

16. The data structure of claim 13, wherein in the pre-processing description, the region dominant color value is obtained based on a filter adapted to the region, a filter size defining that the filter is adapted to the image entire region, and a sliding method with respect to a filter window.

17. The data structure of claim 13, wherein in said frequency condition description, the histogram is obtained and is arranged in accordance with a frequency of a color corresponding to the histogram, so that the values until a threshold values is set by the size is designated as a dominant color.

18. The data structure of claim 13, wherein the number of color channels and a transformation method are defined for expressing a reference color space and a transformation relationship from the reference color space in the color space description.

19. The data structure of claim 13, wherein in the description of the color sub-space, the number of color channels, the color channel and the ranges and each

channel are defined when the region dominant color is expressed in a sub-space of the color space.

20. The data structure of claim 13, wherein the number of the quantized channels of the color space, the quantized channels, and the number of the quantization levels of each channel are defined in the quantization description.

21. The data structure of claim 13, wherein in the color clustering description, when the color is clustered again, the level when the number of the clustering is varied in the region, the number of clusters, and the clustered color channels are defined.

22. A confidence measure extraction method of a video region dominant color, comprising the steps of:

determining a count sum of a confidence and pixels as an initial value;

obtaining a value obtained by counting a color pixel corresponding to each region dominant color with respect to all region dominant colors and a coherence corresponding to a value obtained by each region dominant color;

multiplying the coherence value and the color pixel, adding a confidence to the multiplied value and obtaining a confidence with respect to the region dominant color; and

dividing the thusly obtained confidence value by a region size and extracting a confidence with respect to the image region.

23. A video region dominant color setting method, comprising the steps of:

extracting a region from a visual data;  
setting a dominant color descriptor with respect to a certain region; and  
storing a region descriptor with respect to the region dominant color descriptor  
and a set dominant color.

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24. A video region dominant color descriptor search method, comprising the  
steps of:

selecting a user's region;  
extracting a corresponding region descriptor;  
10 extracting a dominant color with respect to a corresponding region; and  
comparing all stored other region descriptors with a dominant color.

25. An interoperability maintaining method between different systems,  
comprising:

15 transforming, comparing and searching a sharing data format using a region  
descriptor of each system, a region dominant color descriptor of each system and a  
region dominant color descriptor extraction method description data of each system.

20 26. A method for describing color information of a region with a number of  
dominant colors, a frequency that the dominant color appears in the region, and a  
confidence measure of the color of the region, which indicates how much the  
dominant colors are reliable in the given region.